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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,159	01/27/2005	Ryousuke Amano	450100-05073	6467

7590 10/17/2008
William S Frommer
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EXAMINER

HSU, AMY R

ART UNIT	PAPER NUMBER
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2622

MAIL DATE	DELIVERY MODE
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10/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,159	Applicant(s) AMANO, RYOUSUKE	
	Examiner AMY HSU	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/28/08</u> . | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/18/2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

It should be noted that the same prior art as the final rejection dated 5/14/2008 is used although the grounds of rejection is different, and therefore an issue from the applicant's remarks/arguments will be addressed regarding the prior art of the final rejection with respect to examiner's interpretation of the currently amended claim language. Applicant argues on page 8 of the remarks/arguments that Suzuki et al. (US 6515703) "merely discloses reading and processing the image signals into a buffer memory and thereafter reading out all data from the buffer memory". Based on examiner's interpretation of the language of Claim 1, the above statement regarding Suzuki does teach Claim 1. This is because the "first time period" of Claim 1 is not claimed in relation or with respect to the "second time period". For example one is not claimed to occur subsequently after the other, nor are both time periods defined to be

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within or after a frame, etc. Therefore even Suzuki teaching reading and storing into the buffer and then reading/outputting out of the memory could correspond to two different time periods if said time periods are not related. To specifically address the claim language of claim 1: "during a second time period to not read out the charges from the solid-state image pick-up device and to output the charges stored in the storage means after every frame", is interpreted as the charges are stored in the storage means after every frame, and during a second time period after read out, said charges are output. Thus, examiner maintains Suzuki teaches the above discussed portion of claim 1.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6515703) in view of Okino et al. (US 5019911).

Regarding Claim 1, Suzuki teaches an image pick-up apparatus comprising: a solid-state image pick-up device for performing photo-electric conversion in accordance with a received image pick-up light (*Fig. 1*); switching means for performing switching between first mode serving as image pick-up mode where charges stored in the solid-state image pick-up device are read out every n frames to output a CCD output signal

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and second mode serving as image pick-up mode where charges stored in the solid-state image pick-up device are read out every m fields to add odd charges and even charges which are adjacent in a vertical direction of the charges which have been read out while changing the combination thereof every m fields to output a CCD output signal (*Col 7 Lines 51-55 teaches means to select or switch the frame mode or field mode*).

Suzuki further teaches timing generating means (*Fig. 1 reference number 2*) for generating a signal (a) during a first time period to read out the charged stored in the solid-state image pick-up device every n or m frames, depending upon being in the first or second modes, and to store the read out charges in a storage means and (b) during a second time period to not read out the charges from the solid-state image pickup device and to output the charges stored in the storage means after every frame (*Col 15 and 16 teaches the charges are read out after every frame or field depending on frame or field modes, and after the completion of the reading, signal charges are read and transferred out as output. The time during which said processing occur define the first and second time periods*).

One of ordinary skill in the art will recognize that field versus frame mode has advantages based on varying output sensitivity; however Suzuki does not teach switching to the first or second mode based on output sensitivity. Okino teaches a similar image pickup apparatus with ability to switch between field and frame modes, and in *Col 4 Lines 56-68* teaches the field mode is selected when light quantity is insufficient, or high output sensitivity is needed, and the frame mode is selected when light is sufficient, or low out put sensitivity is needed. It would have been obvious to one

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of ordinary skill in the art at the time of the invention to modify the teaching of Suzuki with that of Okino to realize the function of switching between field and frame modes depending on the requested output sensitivity based on the known relationship between high and low output sensitivities with respect to advantages in using field and frame modes, such as to optimize dynamic range.

Regarding Claim 2, Suzuki in view of Okino teach the image pick-up apparatus as set forth in claim 1, and Okino further teaches adjusting gain of the output of an image pick-up signal, wherein the control means controls the switching means so as to switch the image pick-up mode of the image pick-up apparatus into either the first mode or the second mode in accordance with the gain adjusted by the gain adjustment means *(Col 3 Lines 16-19 teaches adjusting gain for the signal in the signal processing circuit, reference number 6 in Fig. 1, which receives the outputted signal from the solid state image pick-up device, reference number 5, and Col 3 Lines 16-19 teach the control circuit performs changing of the sensitivity by adjusting the gain which accordingly determines which mode is selected based on the sensitivity as addressed with Claim 1).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Suzuki with that of Okino for the same reason as that stated in Claim 1. Gain is well known in the art to relate to output sensitivity and therefore changing gain which changes sensitivity will determine switching of the field or frame mode.

Regarding Claim 3, Suzuki in view of Okino teach the image pick-up apparatus as set forth in claim 1, and Okino further teaches the control means controls the switching means so as to switch the image pick-up mode of the image pick-up apparatus into either the first mode or the second mode in accordance with storage time of the charges stored in the solid-state image pick-up device. Fig. 3 Step S8 shows the point in the apparatus' operation where either the field pickup mode or the frame pickup mode is chosen, and this choice is made in accordance with, or depending on, the steps that precede step S8. At Step S4, the control circuit checks if there is sufficient light, if there is not sufficient light the flow moves to step S6 where a storage time, T_o , is passed before closing the shutter and determining sufficient light which leads to the choice between field and frame pickup mode. In this way, the control means controls the switching means to switch between field and frame pickup mode in accordance with the storage time since Fig. 3 depicts the choice in step S8 is in accordance with the preceding steps such as step S6 involving storage time. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Suzuki to automatically switch to the field or frame mode based on the storage time of the charges as taught by Okino because storage time is different for field and frame mode and choosing one over the other will be advantageous given storage time such as to perform faster.

Regarding Claim 7, Suzuki in view of Okino teach the image pick-up apparatus set forth in claim 1, further comprising an image processing means for processing the charges output from the solid-state image pick-up device during the first time period and for processing the charges output from the storage means during the second time period (*Fig. 1 reference numbers 7 and 10, image signal processing circuit and control part, process the charges from the image sensing device and the charges output from the storage means*).

Claims 4-6, 8 are method claims corresponding to claims 1-3, 7 and are therefore rejected similarly.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMY HSU whose telephone number is (571)270-3012. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amy Hsu
Examiner
Art Unit 2622

ARH 10/10/08

/Lin Ye/
Supervisory Patent Examiner, Art Unit 2622